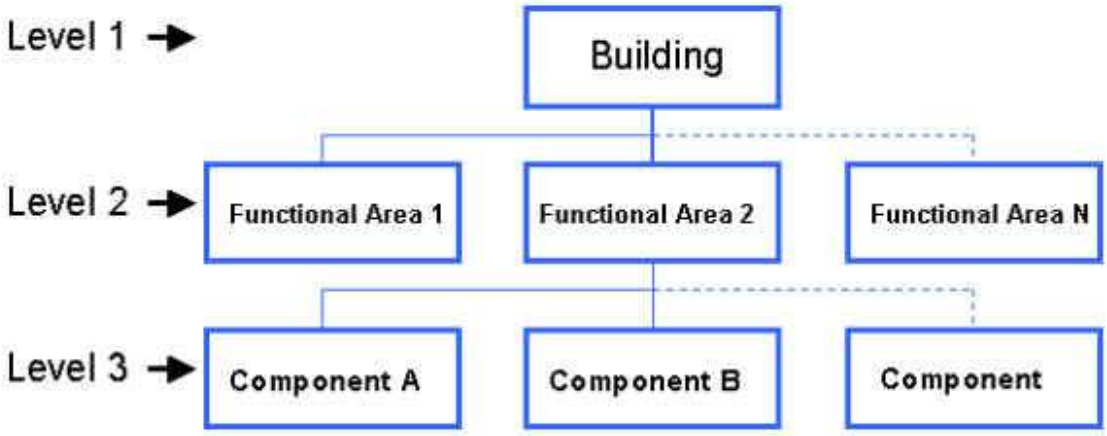
Functionality Assessment

Functionality Assessment Overview

A new feature included in BUILDER 3.0 is the ability to perform functional assessments on buildings to measure the "functionality" state. The functionality state relates to the building's suitability to function as intended and required for mission. The functionality state is distinct from, and determined independently from, the physical condition state. Although the functionality assessment is not a detailed engineering assessment, it does satisfy the requirements necessary for routine building facility management activities including long range budgeting and modernization planning. It also helps to quickly identify problem areas that will require detailed assessments. There may be times when detailed engineering assessments may be required to diagnose specific problems.

Functional assessments are structured into a three-tiered, top-down approach to narrow the focus and provide greater assessment detail to the identified problem issues. This approach saves effort, reduces cost, and focuses attention where needed. It also allows the identification and development of modernization requirements to efficiently flow from a broad strategic planning phase to a detailed execution phase. The assessment approach encompasses the three levels shown below.



In BUILDER 3.0, functionality assessments can be performed at the first and second tiers, or building and functional area levels. Later versions will include the third tier, or component-section level, of functionality assessments.

Overview of the First Tier of Assessment

The first tier of the functionality assessment is a fast, scoping building level assessment. Using a limited set of questions (see First Tier Functionality Issues and Sub-Issues) that address general functionality issues throughout the building, the first tier provides a quick and accurate way to rule out non-problem areas from further assessment, identify problem areas within the building that will require further assessment, and compute the Building Functionality Index (BFI). This level of assessment should be performed when an overall indication of the functionality of

the building is desired and when areas that will require further assessment need to be identified.

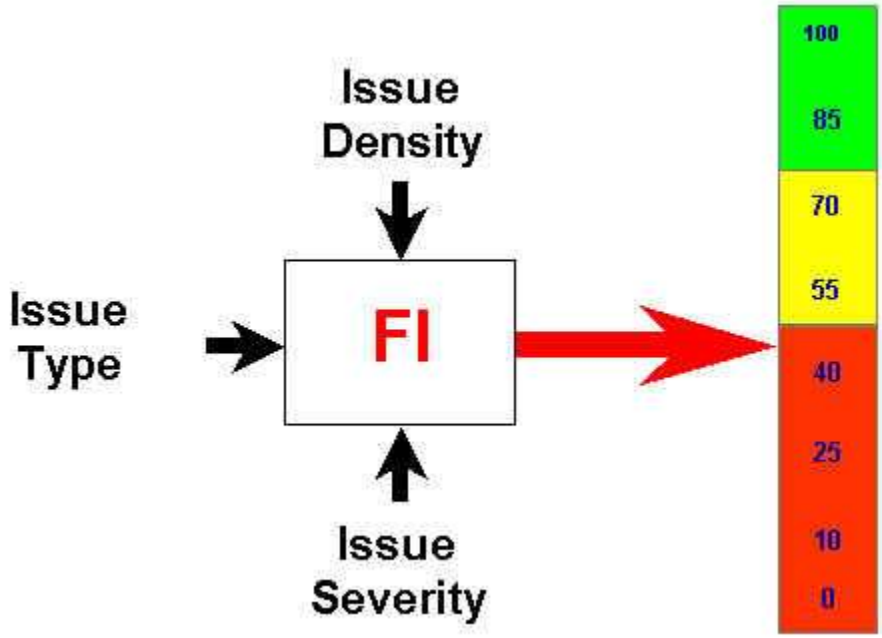
Overview of the Second Tier of Assessment

The second tier of the functionality assessment is a methodical building functional area assessment. This level of assessment produces more accurate results than the first tier, but it is also more time consuming and expensive to perform. In the second tier, a complete list of functionality questions (see Second Tier Functionality Issues and Sub-Issues) is used to identify the specific functionality deficiencies in each functional area, compute the Functional Area Functionality Index (FAFI), and refine the BFI. This level of assessment should be used when the functionality deficiencies within functional areas need to be identified and when the results of the first tier need to be refined.

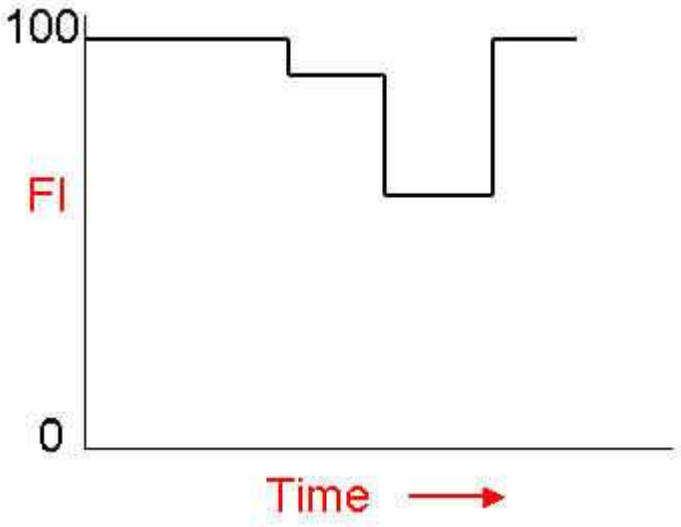
Functionality Index Computation Overview

Functionality assessments directly support the computation of a functionality index (FI) for the building, as a whole, and the functional areas within the building. These indices are known as Building Functionality Index (BFI) and the Functional Area Functionality Index (FAFI), and were developed for use in assessing building functionality. Both the BFI and FAFI are a general obsolescence metrics that addresses the issues related to user requirements, technical obsolescence, and regulatory/code compliance at the building level and functional area level, respectively.

All FI metrics are based on a scale of 0-100, which matches the scale used for the Condition Indices (BCI). BUILDER contains the model algorithms that compute the FI's automatically once the functionality assessment data are entered. The algorithms use the data entered regarding the functionality issues present in the building, the severity of the issues, and the density of the issue to calculate the BFI. This process is illustrated by the figure below.



It is important to note that the FI metrics are step functions over time, unlike the smooth, continuous functions seen in the condition indices. This is because functionality, unlike condition, is not an ongoing process. The functionality of a building (and/or functional area) depends on user needs, technical obsolescence, and compliance with code or regulations. These factors do not change gradually, but rather at discrete points in time. These discrete changes are reflected in the "steps" in the FI over time. The figure below shows an example FI over time.



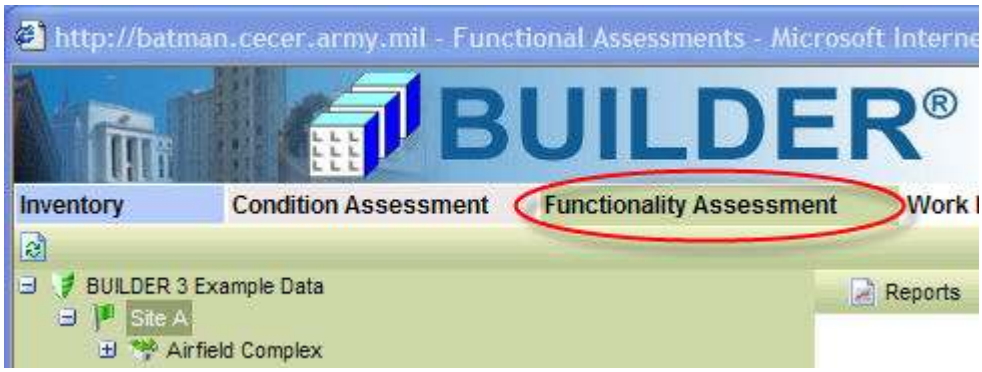
Performing First Tier Functionality Assessments

First tier functionality assessments are associated with the building as a whole. If you have not created the building in your inventory with the proper data, you will be unable to enter functionality assessment data for it. Additionally, you should be familiar with the concepts in the Functionality Assessment Overview and the First

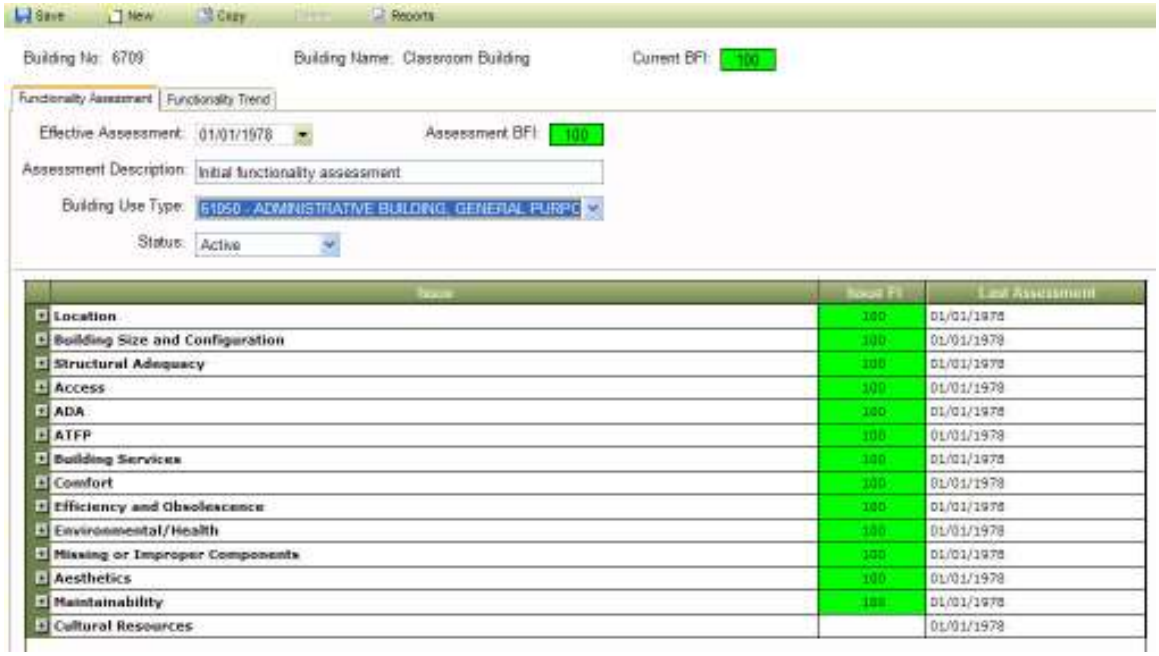
Tier Functionality Issues and Sub-Issues before performing a functionality assessment.

It is important to note that with the addition of the Building Status property in Version 3.0 of BUILDER, it is possible to have functionality assessment records for non-current buildings. Performing assessments on non-current buildings are performed in the same manner as current buildings.

When you are ready to add or edit functionality assessment data for a building, select the navigation menu option *Functionality Assessment*.



The functionality assessment navigation tree will appear. Navigate the tree to the building you wish to perform the functionality assessment on. The window shown below will appear.



Toolbar

- SAVE. Use this button to save the changes that have been made to the functionality assessment.

- NEW. Use this button to create a new functionality assessment.
- COPY INSPECTION. Use this button to copy a previous functionality assessment. All previous functionality assessment data for the date selected will be copied to a functionality assessment for the current date.
- DELETE. Use this button to delete the current functionality assessment.
- REPORTS. Use this button to launch the Report Selection tool, which gives you access to a list of standard reports relevant to the functionality assessment of the building. See Using the Report Viewer.

Functionality Assessment Data

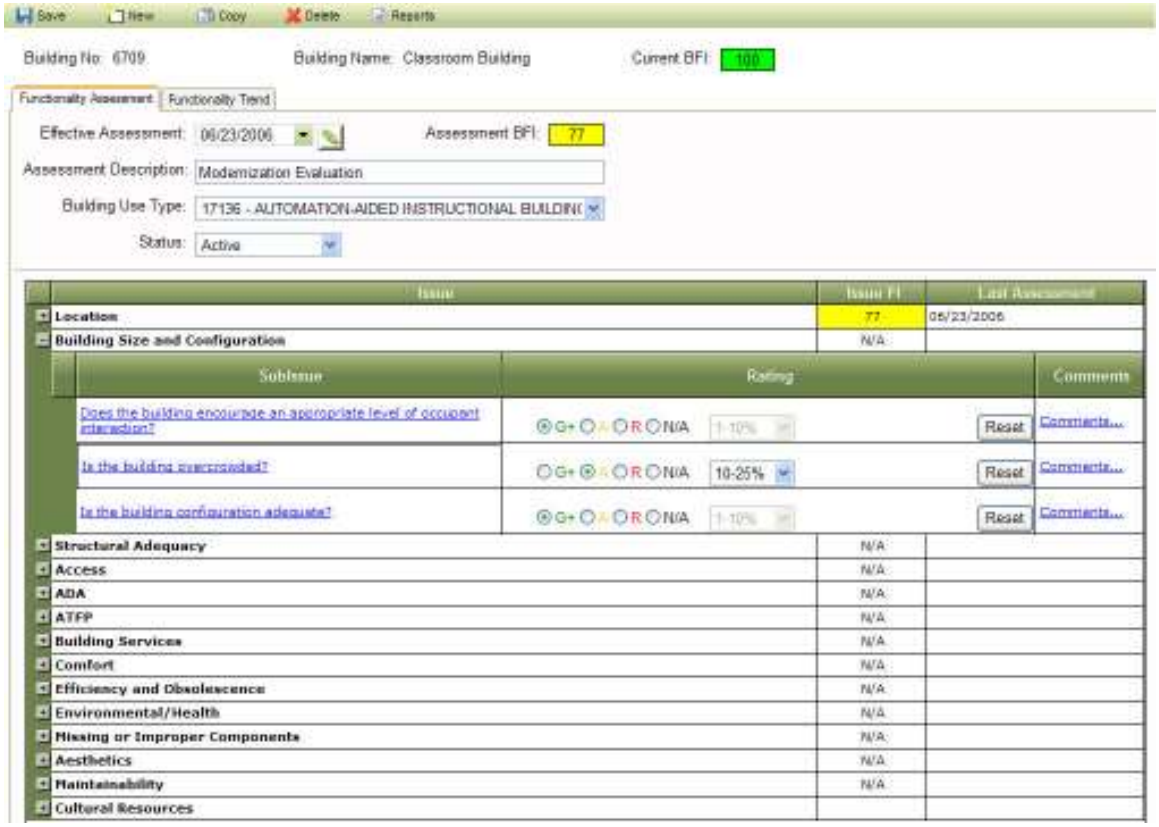
After a building is selected, general data about the building will be shown at the top of the screen. This data includes the building number, building name, and the current building functionality index (BFI). Below this data are additional data that is associated with functional assessments of the building:

- **Effective Assessment** (Required). Select the date of the functionality assessment you wish to see data for from the dropdown list. All functionality assessments that have been previously recorded will be accessible from this list. If you have created a new functionality assessment, the current date will be shown in this field.
- **Assessment BFI** (Read-Only). Displays the BFI computed based on the data recorded for the assessment currently selected.
- **Assessment Description** (Optional)**.** Enter a brief description on the functionality assessment.
- **Building Use Type** (Required)**.** Select the building use type from the dropdown list that most closely matches the building. If you are a Department of Defense activity, BUILDER should display familiar category codes for your service. This filed is helpful when a building is being assessed against many use types to determine its optimal use type.
- **Status** (Required). Select the status of the current assessment from the dropdown list. The status options available for a functionality assessment in BUILDER 3.0 are:
    - Active. Sets the current functional assessment to active and is used to compute the current BFI.
    - Past. Sets the current functional assessment to a past assessment. This assessment data is not used when computing the current BFI.
    - To Take Effect. Sets the current functional assessment to a future year when user requirements, codes, or obsolescence are expected to change and affect the functionality of the building. These assessments are particularly useful to use when running IMPACT scenarios.
- **Effective Year of Status**. Enter the year the status of the assessment will become active, or effective in the building. This field will only appear if the status is set to "To Take Effect."

The actual assessment data is displayed and recorded in the grid in the lower portion of the screen and includes:

- **Issue** (Read-Only). Displays the 14 first tier functionality issues included in BUILDER 3.0. Expand the issues to show its sub-issues by using the "+" next to the issue. If the sub-issues are expanded, they can be collapsed by clicking the "-" next to the issue.

- **Rating** (Read-Only). Displays the FI rating for the issue computed from the ratings of its sub-issues.
- **Last Assessment** (Read-Only). Displays the date of the last functionality assessment for the issue.
- **Sub-Issue** (Read-Only). If the issues have been expanded, its sub-issues will be shown in this column on the grid.
- **Sub-Issue Rating.** Enter the applicable rating data for the functionality sub-issues in the building. The rating for each sub-issue consists of a severity color rating, along with a density range for some sub-issues. The hyperlinked text for each sub-issue provides a link to the definition and rating guidelines of the sub-issue.



Rating Sub-Issues with Wizards

For some sub-issues, a wizard is provided to help you perform the rating for that sub-issue. To launch the wizard, click the WIZARD link included in the sub-issue row. The wizard for that sub-issue will appear in a new window. Follow the instructions in the wizard to complete the rating. Note that you are not able to directly enter the severity rating or density from the sub-issue grid for the sub-issues that use a wizard.

Sub-Issue Comments

Additionally, comments can be added for each sub-issue by clicking the COMMENTS button in the sub-issue row. The comments window will appear in a new window.

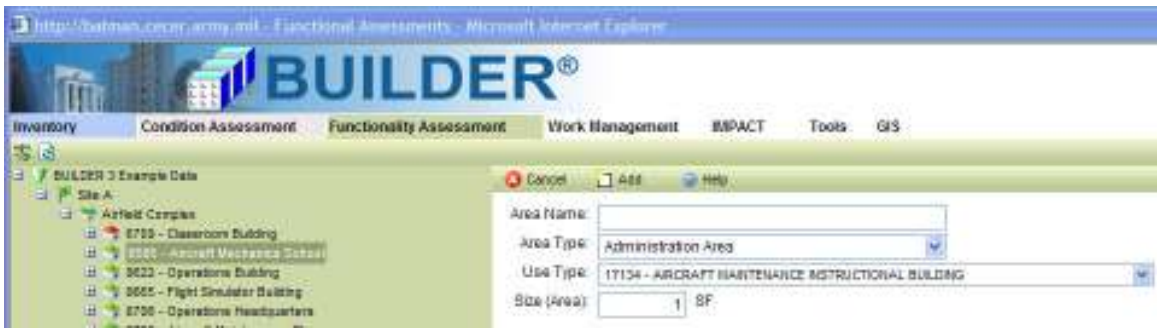
Enter any comments about the rating of the sub-issue and click CLOSE to close the window and save the changes.

Adding Functional Areas to a Building

New to BUILDER 3.0 is the ability to separate the building into functional areas, which must be done before the second tier functionality assessments can be performed, functional areas must be created in buildings. Functional areas describe the use and classification of different building spaces.

To add a functional area to a building, select the building in the functionality assessment navigation tree, then click the *Add Functional Area* button.

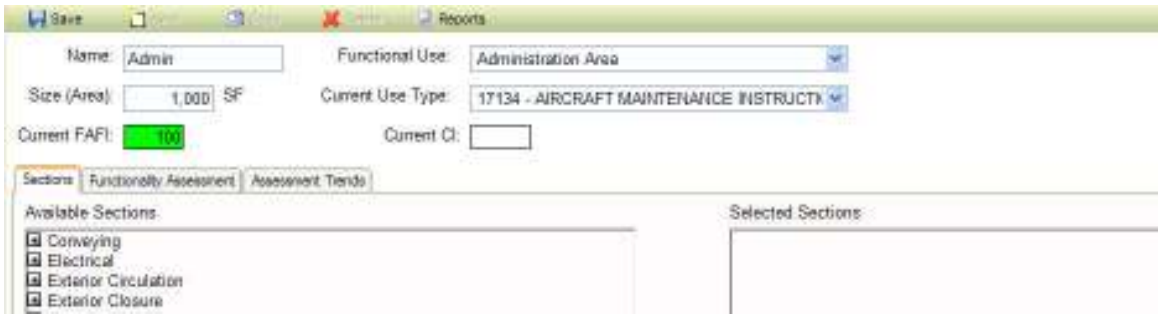
The context area of the BUILDER screen will appear as shown below.



On this screen, enter the required data for the functional area:

- **Area Name**. Enter the name of the functional area.
- **Area Type**. Select the functional area type from the dropdown list provided. BUILDER allows you to choose from 26 different functional area types.
- **Use Type**. Select the use type of the functional area from the dropdown list. This dropdown list contains the same use types as the Building Use.
- **Size (Area)**. Enter the size or area of the functional area.

After entering the information described above, click the ADD button on the toolbar. The functional area will be created in the building, and the context area of the BUILDER screen will appear as shown below. If you do not wish to create the functional area, click the CANCEL button on the toolbar.

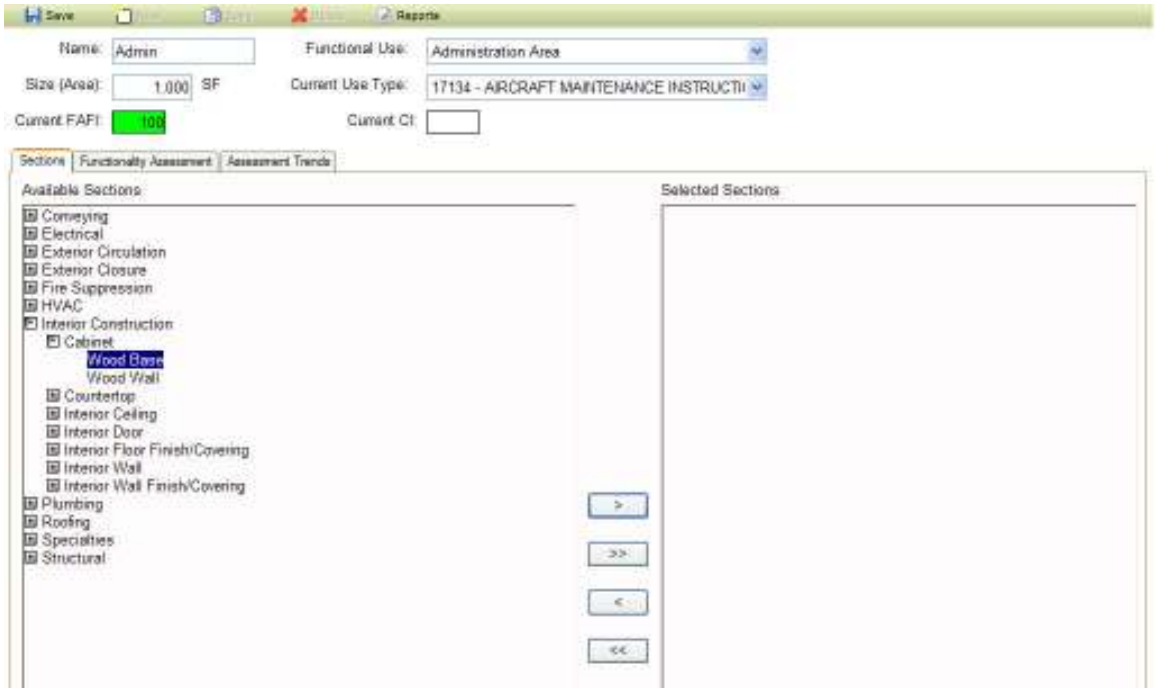


From this screen, all of the data described above can be edited, along with some additional data:

- **Current FAFI** (Read-Only). Displays the current FAFI of the selected functional area. The current FAFI is computed using the results of the active functionality assessment for the functional area.
- **Current CI** (Read-Only). Displays the current CI of the functional area. The current CI is computed using an average of the section CI's in the functional area, weighted by replacement cost.
- **Sections Tab**. This tab allows you to add sections in the building's inventory to the functional area. See Adding Inventory to Functional Areas for a complete description.
- **Functionality Assessment Tab**. This tab allows you to perform second tier functionality assessment on the functional area.
- **Trends Tab**. This tab displays the CI, FI, and PI trends of the functional area from the date the building was built to the current date.

Adding Inventory to Functional Areas

Entire systems, individual components, or individual sections can be added to the inventory of a functional area from the Sections tab on the Functional Area screen. To add a particular system, component, or section to a functional area select the desired inventory item from the *Available Sections* tree and use the arrow keys to move it to the *Selected Sections* tree. Similarly, inventory items can be removed from the *Selected Sections* tree by selecting the desired inventory item from the *Selected Sections* tree and using the arrow keys to move it back to the *Available Sections* tree.

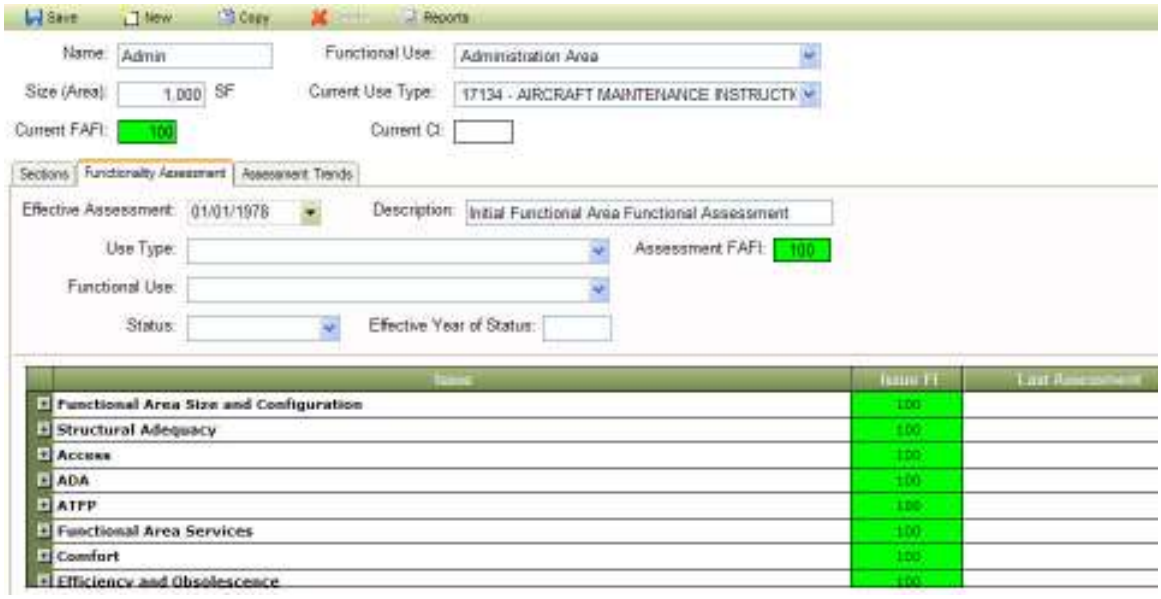


It is important to note that once a particular section is assigned to a functional area's inventory, it cannot be assigned to another functional area's inventory. After the section has been assigned to a functional area, it will not appear in the *Available Sections* tree any more. Similarly, once all of the sections for a particular component (and all of the components for a system) have been assigned to a functional area's inventory, the component (and system) cannot be assigned to another functional area's inventory and will not appear on the *Available Section* tree.

Performing Second Tier Functionality Assessments

Second tier functionality assessments are performed on the individual functional areas in the building. If you have not created functional areas in the building with the proper data, you will be unable to enter functionality assessment data for it. Additionally, you should be familiar with the concepts in the Functionality Assessment Overview and the Second Tier Functionality Issues and Sub-Issues before performing a second tier functionality assessment.

When you are ready to add or edit functionality assessment data for a functional area, select the navigation menu option *Functionality Assessment*. The functionality assessment navigation tree will appear. Navigate the tree to the functional area you wish to perform the functionality assessment on and select the Functionality Assessment tab. The window shown below will appear.



Toolbar

- SAVE. Use this button to save the changes that have been made to the functionality assessment.
- NEW. Use this button to create a new functionality assessment.
- COPY INSPECTION. Use this button to copy a previous functionality assessment. All previous functionality assessment data for the date selected will be copied to a functionality assessment for the current date.
- DELETE. Use this button to delete the current functionality assessment.
- REPORTS. Use this button to launch the Report Selection tool, which gives you access to a list of standard reports relevant to the functionality assessment of the building. See Using the Report Viewer.

Functionality Assessment Data

After a functional area is selected, the general data that was input when creating the functional area will be shown at the top of the screen. This data includes the name, functional use, size, and current use type, along with the current functional area functionality index (FAFI) and current functional area CI. Below this data are additional data that is associated with functional assessments of the functional area:

- **Assessment** (Required). Select the date of the functionality assessment you wish to see data for from the dropdown list. All functionality assessments that have been previously recorded will be accessible from this list. If you have created a new functionality assessment, tthe current date will be shown in this field.
- **Description** (Optional)**.** Enter a brief description on the functionality assessment.
- **Use Type** (Required)**.** Select the use type from the dropdown list that most closely matches the functional area. If you are a Department of Defense activity, BUILDER should display familiar category codes for your service. This filed is helpful when a functional area is being assessed against many use types to determine its optimal use type.

- **Assessment FAFI** (Read-Only). Displays the FAFI computed based on the data recorded for the assessment currently selected.
- **Functional Use** (Required). Select the functional use from the dropdown list that most closely matches the functional area. BUILDER allows you to choose from 26 different functional area types. This field is helpful when a functional area is being assessed against many functional uses to determine its optimal functional use.
- **Status** (Required). Select the status of the current assessment from the dropdown list. The status options available for a functionality assessment in BUILDER 3.0 are:
    - Active. Sets the current functional assessment to active and is used to compute the current FAFI.
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- **Effective Year of Status**. Enter the year the status of the assessment will become active, or effective in the functional area. This field will only appear if the status is set to "To Take Effect."

The actual assessment data is displayed and recorded in the grid in the lower portion of the screen and includes:

- **Issue** (Read-Only). Displays the 13 second tier functionality issues included in the assessment. Expand the issues to show its sub-issues by using the "+" next to the issue. If the sub-issues are expanded, they can be collapsed by clicking the "-" next to the issue.
- **Rating** (Read-Only). Displays the FI rating for the issue computed from the ratings of its sub-issues.
- **Last Assessment** (Read-Only). Displays the date of the last functionality assessment for the issue.
- **Sub-Issue** (Read-Only). If the issues have been expanded, its sub-issues will be shown in this column on the grid.
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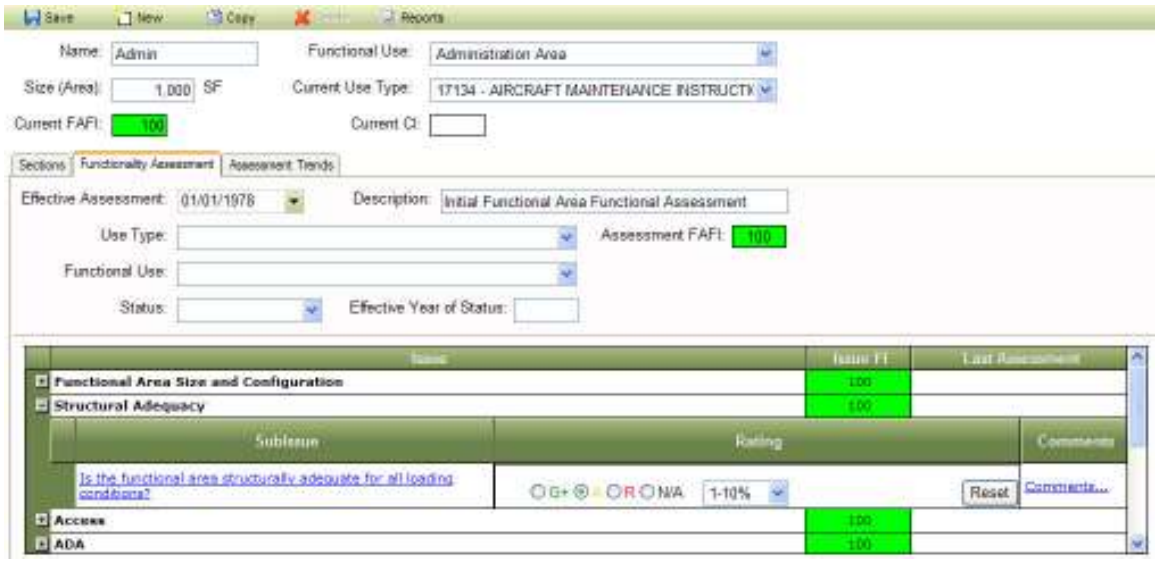

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